

A NEW SPECIES OF WATER SCAVENGER BEETLE,
GUYANOBIUS SIMMONSORUM, FROM BRAZIL
(COLEOPTERA: HYDROPHILIDAE)

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Abstract.—A new species of water scavenger beetle, *Guyanobius simmonsorum*, from a tributary of the Rio Xingú in the state of Pará, Brazil is described. The beetle is illustrated by pen and ink drawings and SEM micrographs and is distinguished from the only other species described in the genus, *Guyanobius adocetus* Spangler.

Key Words: Hydrophilidae, *Guyanobius simmonsorum*, new species, water scavenger beetle, Brazil

The genus *Guyanobius* was described for the single species, *G. adocetus* Spangler (1986) from Guyana. This second species of *Guyanobius* was collected in Brazil shortly after the description of the genus was published and is described to further define the genus. The specimens of this new species were collected from a small shaded tributary of the Rio Xingú where it flows through a lowland tropical rainforest in the Brazilian state of Pará. The specimens were collected during a biological survey of the area in advance of the construction of a hydroelectric dam on the river. If the dam is constructed as planned, the habitat from which this new species was collected will be inundated.

Guyanobius simmonsorum, NEW SPECIES
Figs. 1-11

Holotype ♂.—Form and size: Hemispherical, strongly convex dorsally (Figs. 1, 2). Length, 2.98 mm; greatest width, 2.24 mm.

Color: Shiny black dorsally except narrow band on anterior margin of head, lateral margins of pronotum, and very narrow lateral margins and posterior half of sutural margins of elytra dark reddish brown. Ven-

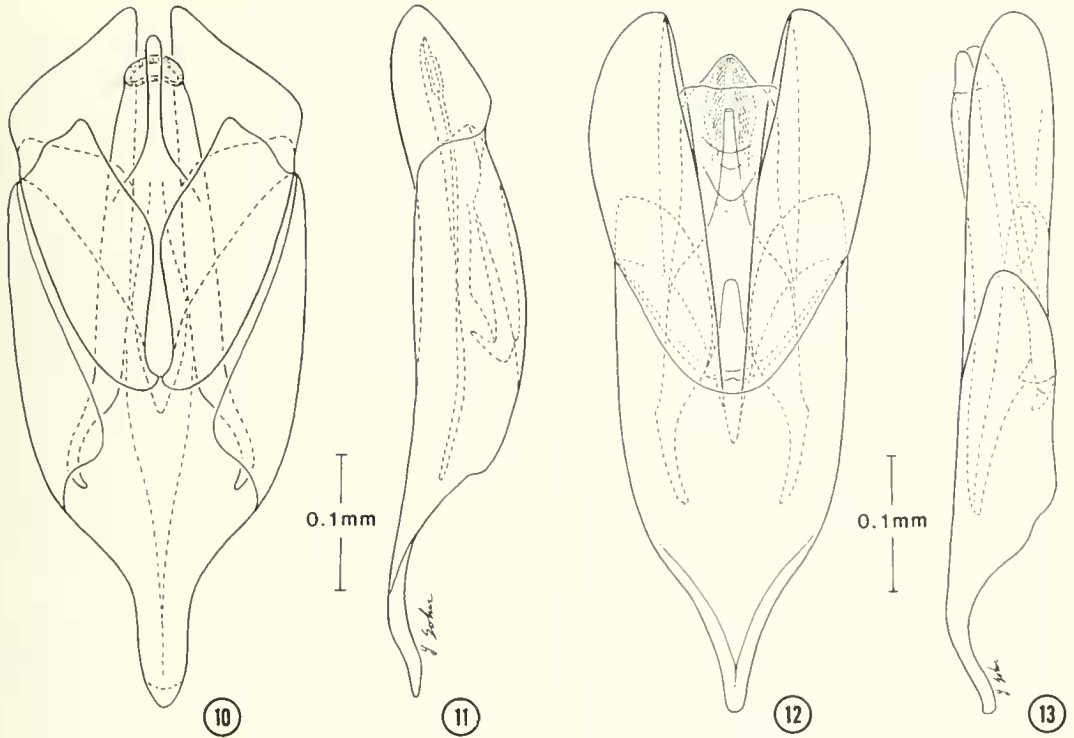
ter light reddish brown except metasternal disc and middle of abdominal segments 1 and 2 slightly darker reddish brown.

Head: Very finely, sparsely punctate; discal punctures separated by 4 to 8 times puncture diameter; punctures across base of head between eyes smaller and sparser than discal punctures and separated by 3 to 4 times puncture diameter. Clypeus (Fig. 4) strongly, broadly expanded anteriorly and laterally, concealing labrum (Fig. 4); lateral margin extending deeply into eye; anterior margin feebly arcuate apicomediaally. Mentum shallowly concave, moderately broad and moderately emarginate apicomediaally; surface moderately coarsely, densely punctate; punctures separated by 3 to 5 times puncture diameter. Submentum shallowly concave and densely, finely punctate; each puncture bearing a seta.

Thorax: Pronotum widest at posterior third; strongly rounded laterally; shallowly emarginate apically and feebly arcuate apicomediaally (Fig. 1); truncate posteriorly; narrowly rimmed laterally and anterolaterally behind eyes; not rimmed posteriorly except at posterolateral angles; sides nearly



Figs. 1-9. *Guyanobius simmonsorum*, new species, ♂: 1, habitus, dorsal view, $\times 30$; 2, habitus, ventral view, $\times 25$; 3, prosternum, mesosternum, metasternum, $\times 60$; 4, head, ventral view, $\times 60$; 5, metasternum and abdomen, $\times 60$; 6, setation, hind margin of abdominal sternum 2, $\times 1000$; 7, hind femur, $\times 100$; 8, hind tibia, $\times 120$; 9, protarsal claws, $\times 800$.



Figs. 10–13. 10, 11. *Guyanobius simmonsorum*, new species, genitalia, ♂: 10, ventral view; 11, lateral view. Figs. 12, 13. *Guyanobius adocetus* Spangler, genitalia, ♂: 12, ventral view; 13, lateral view.

vertical, extending well below prosternum; discal punctures finer and slightly more widely separated than discal punctures of head; most punctures separated by 6 to 8 times puncture diameter; lateral punctures slightly coarser. Prosternum with distinct, keel-like, medial process on anterior third; keel extending beyond anterior margin of prosternum; a tuberculate process on posteromedial margin (Figs. 2–4). Mesosternum with moderately broad, triangular protuberance between and slightly in front of mesocoxae (Fig. 3). Metasternum shiny, glabrous (except a few setae behind mesocoxae); with raised, broadly triangular area medially; sides shallowly concave; metepisterna pubescent. Procoxae sparsely finely setose laterally but with 12 very stout, darker setae ventroapically. Profemora densely punctate and pubescent ventrally on basal two-thirds; mesofemora and metafemora,

except apical fourth, densely punctate and pubescent ventrally (Fig. 7); male protarsal claws with broad, tooth-like base (Fig. 9); metatarsal claws without tooth-like base. Elytra with sides nearly vertical, extending well below mesosternum, metasternum, and abdominal sterna (Fig. 2); without sutural striae; finely, sparsely punctate; punctures larger than those on pronotal disc and disarranged except as follows. Each elytron with 1 incomplete, indistinct row of moderately coarse, shallow punctures laterally, punctures separated by about 2 times puncture diameter; lateral punctate row starting a short distance behind humeral area and extending a distance about equal to $\frac{1}{2}$ length of elytron; with 4 additional poorly defined rows of widely separated, seta-bearing punctures. Lateral margin of each elytron narrowly rimmed from base to apex. Scutellum flat, triangular; surface finely, sparse-

ly punctate; punctures separated by 3 to 9 times puncture diameter.

Abdomen: Sterna 1 and 2 strongly concave; with coarse, sparse, seta-bearing punctures; punctures separated by 2 to 4 times puncture diameter; posterior margin of sternum 2 with a dense row of robust setae (Figs. 5, 6). Remaining sterna finely and densely punctate and densely pubescent.

Male genitalia: As illustrated (Figs. 10, 11).

Female.—Similar to male except average size is larger.

Variations.—Males (N = 10) varied in length from 2.86 to 3.30 mm (=3.05) and in width from 2.07 to 2.39 mm (=2.23); females (N=10) varied in length from 2.94 to 3.53 mm (=3.27) and in width from 2.30 to 2.60 mm (=2.47). The concavity of sterna 1 and 2 of some specimens bears a lens-shaped hyaline mass as is seen on specimens of *Laccobius* and *Chaetarthria*. The hyaline mass is not present on many specimens because it is easily dislodged when specimens are placed in alcohol.

Comparative notes.—*Guyanobius simmonsorum* is very similar to *G. adocetus* Spangler (1986) from Guyana but may be distinguished from it as follows (character state for *G. simmonsorum* stated first). Elytral rim present from base to apex vs rim disappearing at apical fourth; elytron with 1 incomplete, indistinct row of moderately coarse shallow punctures laterally and behind humeral area vs elytron with 3 rows of coarse, distinct punctures laterally behind humeral area. Mentum with entire surface coarsely, densely punctate vs surface of mentum moderately coarsely, sparsely punctate laterally and meson almost glabrous. Parameres (Figs. 10, 11) with apices subtriangular vs apices of parameres rounded (Figs. 12, 13).

Type data.—*Holotype male:* BRAZIL: PARA: Altamira (ca. 60 km S), Rio Xingú Camp, 52°22'W, 3°39'S, 14 Oct 1986, P. J. Spangler & O. S. Flint, colln #23, left branch off 1st jungle stream on trail 1; deposited in

the Museu de Zoologia, Universidad de Sao Paulo, Brazil. Allotype: same data as holotype.

Paratypes: Same data as holotype, 24 ♂, 18 ♀; same data except: 3 Oct 1986, colln #6, 11 ♂, 11 ♀; 7 Oct 1986, colln #12, 3 ♂, 2 ♀.

Paratypes will be deposited in the British Museum (Natural History), London; California Academy of Sciences, San Francisco; Canadian National Collection, Ottawa; Institut Royal de Histoire Naturelle de Belgique, Bruxelles; Museo Argentina de Ciencias Naturales, Buenos Aires; Museo de Zoologia, Universidad de Sao Paulo, Sao Paulo; National Museum of Natural History, Smithsonian Institution, Washington, D.C.; Zoologische Staatssammlung München, München.

Etymology.—The specific epithet *simmonsorum* is named for the Jerry L. Simmons family for their interest in and support of aquatic Coleoptera research at the Smithsonian Institution.

Habitat.—The type material was collected from a small, shaded stream that flowed slowly from pool to pool through the jungle near the base camp. The stream was at an altitude of 90 meters; had a velocity of 2 m/min; was clear, a meter wide, and up to 75 cm deep; had a sand and leafy substratum, and colorimetric readings of hardness, 0, and a pH 5. The water temperature was 25.5°C and the air temperature was 27.5°C at the time the specimens were collected.

The following aquatic insects were associated with *G. simmonsorum* in the same habitat: COLEOPTERA: DRYOPIDAE: *Pelonomus*, *Dryops*. DYTISCIDAE: *Laccophilus*, *Derovatellus*, *Desmopachria*, *Bidesines*. ELMIDAE: *Tyletelmis*, *Heterelmis*; HYDRAENIDAE: *Hydraena*; HYDROPHILIDAE: *Derallus*, *Paracymus*, *Helochaeres*, *Hydrochus*, *Phaenonotum*, *Notionotus*; LUTROCHIDAE: *Lutrochus*. GYRINIDAE: *Gyretes*.

HETEROPTERA: BELOSTOMATIDAE: *Belostoma*. GERRIDAE. HELOTRE-

PHIDAE: *Helotrephes*. HYDROMETRIDAE: *Hydrometra*. NAUCORIDAE: *Ambrysus*. NEPIDAE: *Ranatra*. VELIIDAE: *Microvelia*, *Paravelia*, *Rhagovelia*.

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